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STATE OF ILLINOIS

DEPARTMENT OF ENERGY AND NATURAL RESOURCES



## *Public Groundwater Supplies in Will County*

by DOROTHY M. WOLLER and ELLIS W. SANDERSON

REFERENCE 19

SITE NAME TRIEM STEEL

SITE ID ILD001744572

EPA Region 5 Records Ctr.



360892

ILLINOIS STATE WATER SURVEY

CHAMPAIGN

1983

On September 6, 1959, the well reportedly produced 200 gpm for 5 hr with a drawdown of 62 ft from a non-pumping water level of 5 ft.

The pumping equipment presently installed is a Peerless submersible pump set at 105 ft, rated at 200 gpm at about 201 ft head, and powered by a 15-hp U. S. electric motor.

WELL NO. 5, open to the Silurian dolomite and the Maquoketa Group, was completed in August 1947 to a depth of 352 ft (reported to be 315 ft deep in 1979) by the J. P. Miller Artesian Well Co., Brookfield. This well was acquired from the Coca Cola Bottling Co. in 1978. The well is located on Route 30, approximately 200 ft N and 125 ft W of the SE corner of Section 31, T36N, R10E. The land surface elevation at the well is approximately 625 ft.

A drillers log of Well No. 6 follows:

Strata	Thickness (ft)	Depth (ft)
Clay	15	15
Sand and gravel	25	40
Limestone	70	110
Shale	25	135
Limestone	17	152
Shale	4	156
Limestone	149	305
Shale	10	315
Limestone	37	352

Originally, a 10-in. diameter hole was drilled to a depth of 352 ft. In 1979, it was reported that the hole was 10 in. in diameter to a depth of 102.3 ft and 8 in. in diameter from 102.3 to 315 ft. The well is cased with 10-in. pipe from land surface to a depth of 40 ft.

A production test was conducted by the driller on August 6, 1947. After 5.9 hr of pumping at rates ranging from 230 to 110 gpm, the final drawdown was 82 ft from a nonpumping water level of 46 ft below the top of the casing.

On January 6, 1961, the nonpumping water level was reported to be 40 ft below the pump base.

A production test was conducted by the driller on April 24, 1979. After 3.2 hr of pumping at rates ranging

from 195 to 240 gpm, the drawdown was 49 ft from a non-pumping water level of 58 ft. Pumping was continued for 1.4 hr at a rate of 190 gpm with a drawdown of 40 ft. After an additional 1.9 hr of pumping at a rate of 150 gpm, the final drawdown was 31 ft. Twenty min after pumping was stopped, the water level had recovered to 60 ft.

The pumping equipment presently installed is a submersible pump rated at 210 gpm, and powered by a 25-hp electric motor.

A partial analysis of a sample (Lab. No. 153955) collected January 6, 1961, after pumping for 5 min at 100± gpm, showed the water to have a hardness of 388 mg/l, total dissolved minerals of 442 mg/l, and an iron content of 0.1 mg/l.

WELL NO. 7, open to the Silurian dolomite, was completed in October 1979 to a depth of 296 ft by the J. P. Miller Artesian Well Co., Brookfield. As of October 1980, this well was not in use. The well is located approximately 2400 ft N and 350 ft W of the SE corner of Section 32, T36N, R10E. The land surface elevation at the well is approximately 610 ft.

A drillers log of Well No. 7 follows:

Strata	Thickness (ft)	Depth (ft)
Drift	26	26
Limestone	265	291
Shale	5	296

A 15-in. diameter hole was drilled to a depth of 40 ft and finished 12 in. in diameter from 40 to 296 ft. The well is cased with 16-in. OD steel pipe from land surface to a depth of 26 ft and 12-in. steel pipe from land surface to a depth of 40 ft (cemented in).

Upon completion, the well reportedly produced 440 gpm for 8 hr with a drawdown of 86 ft from a nonpumping water level of 47 ft below land surface.

The permanent pumping equipment is not yet installed.

## CRETE

The village of Crete (4656) installed a public water supply in 1903. Three wells (Nos. 3, 4, and 5) are in use. In 1949 there were 350 services, 98 percent metered; the estimated average pumpage was 75,000 gpd. In 1980 there were 1415 services, all metered; the average pumpage was 439,408 gpd. The water is chlorinated and fluoridated.

WELL NO. 1, open to the Silurian dolomite, was completed in 1903 to a depth of 192 ft. This well was abandoned in 1979. The well is located in the west end of the village hall building at 524 Exchange St., approximately 730 ft N

and 180 ft W of the SE corner of Section 8, T34N, R14E. The land surface elevation at the well is approximately 725 ft.

A 10-in. diameter hole was drilled to a depth of 192 ft. The well is cased with 10-in. pipe from land surface to a depth of 150 ft.

On June 29, 1915, the nonpumping water level was reported to be 30 ft below the pump base.

A production test was conducted on December 5, 1945, by representatives of the State Water Survey and Miller Engineering Co. After 1.2 hr of pumping at a rate of 123

gpm, the drawdown was 4.5 ft from a nonpumping water level of 48.5 ft below the pump base. Pumping was continued for 34 min at a rate of 139 gpm with a drawdown of 5.5 ft. Pumping was continued for 25 min at a rate of 147 gpm with a drawdown of 6.5 ft. After an additional 44 min of pumping at rates ranging from 169 to 193 gpm, the drawdown was 10.5 ft. Nine min after pumping was stopped, full recovery was observed.

A production test was conducted by the State Water Survey on September 6, 1949. After 5.8 hr of pumping at rates ranging from 210 to 261 gpm, the drawdown was 11.5 ft from a nonpumping water level of 51.5 ft. During this test, Well No. 2 was pumping continuously.

On December 3, 1968, the well reportedly produced 200 gpm for 15 min with a drawdown of 21 ft from a nonpumping water level of 61 ft.

A mineral analysis made by the Illinois Environmental Protection Agency (Lab. No. C003524) of a sample collected December 27, 1976, after pumping for 1.5 hr at 130 gpm, showed the water to have a hardness of 436 mg/l, total dissolved minerals of 480 mg/l, and an iron content of 0.8 mg/l.

WELL NO. 2, open to the Silurian dolomite, was constructed in 1924 to a depth of 264 ft by the W. L. Thorne Co., Des Plaines, and deepened in 1958 to a reported depth of 279 ft by the Wehling Well Works, Beecher. This well was abandoned in 1979. The well is located about 70 ft south of Well No. 1, approximately 660 ft N and 180 ft W of the SE corner of Section 8, T34N, R14E. The land surface elevation at the well is approximately 725 ft.

A sample study log of Well No. 2 furnished by the State Geological Survey follows:

Strata	Thickness (ft)	Depth (ft)
QUATERNARY SYSTEM		
Pleistocene Series		
Clay	12	12
Sand, silty	8	20
Sand, clean	15	35
Sand, dirty	45	80
SILURIAN SYSTEM		
Niagaran Series		
Dolomite	70	150
Dolomite, silty, siltstone, thin shale bed at top	65	215
Dolomite	30	245
Dolomite, partly silty	19	264

A 12-in. diameter hole was drilled to a depth of 215 ft and finished 10 in. in diameter from 215 to 279 ft. The well is cased with 12-in. ID pipe from land surface to a depth of 99 ft and 10-in. ID liner from 166 ft to a depth of 215 ft.

Upon completion, the well reportedly produced 300 gpm with a drawdown of 32 ft from a nonpumping water level of 40 to 45 ft below the pump base.

A mineral analysis made by the Illinois Environmental Protection Agency (Lab. No. C002588) of a sample collected in November 1978, after pumping for 2 hr at 140 gpm, showed the water to have a hardness of 449 mg/l, total dissolved minerals of 518 mg/l, and an iron content of 1.1 mg/l.

WELL NO. 3, open to the Silurian dolomite, was completed in November 1955 to a depth of 265 ft by Kramer Bros., Harvey. The well is located in the northwest corner of the village park, approximately 2050 ft N and 150 ft W of the SE corner of Section 8, T34N, R14E. The land surface elevation at the well is approximately 720 ft.

A drillers log of Well No. 3 follows:

Strata	Thickness (ft)	Depth (ft)
Drift	100	100
Niagaran limestone	163	263

A 12-in. diameter hole was drilled to a depth of 265 ft. The well is cased with 12-in. ID pipe from about 1 ft above the pump station floor to a depth of 98 ft.

Upon completion, the well reportedly produced 450 gpm for 4 hr with a drawdown of 64 ft from a nonpumping water level of 42 ft below the top of the pump base.

This well was acidized in 1964 by the Wehling Well Works, Beecher.

The pumping equipment presently installed is an 8-in., 11-stage Fairbanks-Morse Pomona turbine pump (No. AV3722) set at 130 ft, rated at 400 gpm at about 234 ft TDH, and powered by a 30-hp 1770 rpm Fairbanks-Morse electric motor.

The following mineral analysis made by the Illinois Environmental Protection Agency (Lab. No. C002586) is for a water sample from the well collected in November 1978, after 1.5 hr of pumping at 200 gpm.

WELL NO. 3, LABORATORY NO. C002586									
		mg/l	me/l			mg/l	me/l		
Iron	Fe	1.4		Silica	SiO <sub>2</sub>	16			
Manganese	Mn	0.02		Fluoride	F	0.2	0.01		
Ammonium	NH <sub>4</sub>	0.09	0.00	Boron	B	0.3			
Sodium	Na	10	0.44	Cyanide	CN	0.00			
Potassium	K	3.0	0.08	Nitrate	NO <sub>3</sub>	0.48	0.01		
Calcium	Ca	94	4.69	Chloride	Cl	7	0.20		
Magnesium	Mg	48	3.95	Sulfate	SO <sub>4</sub>	61	1.27		
				Alkalinity(asCaCO <sub>3</sub> )		376	7.52		
Arsenic	As	0.000		Hardness(asCaCO <sub>3</sub> )		434	8.68		
Barium	Ba	0.0							
Cadmium	Cd	0.00		Total dissolved					
Chromium	Cr	0.00		minerals		514			
Copper	Cu	0.00							
Lead	Pb	0.00							
Mercury	Hg	0.0000							
Nickel	Ni	0.0							
Selenium	Se	0.00							
Silver	Ag	0.00							
Zinc	Zn	0.01		pH (as rec'd)		8.1			

WELL NO. 4 (former Chapman Swiss Valley Subdivision well), open to the Silurian dolomite, was completed in September 1967 to a depth of 350 ft by the Wehling Well Works, Beecher. The well is located about 50 ft east of Haweswood Drive, approximately 350 ft S and 1550 ft E of the NW corner of Section 3, T34N, R14E. The land surface elevation at the well is approximately 670 ft.

A drillers log of Well No. 4 follows:

Strata	Thickness (ft)	Depth (ft)
Mud	55	55
Mud and gravel	5	60
Lime	290	350

A 12-in. diameter hole was drilled to a depth of 63 ft and finished 11.9 in. in diameter from 63 to 350 ft. The well is equipped with a Baker pitless adapter from about 1.5 ft above land surface to a depth of 6 ft and cased with 12-in. pipe to a depth of 63 ft.

A production test was conducted by the driller on September 20-21, 1967. After 18 hr of pumping at rates of 1040 to 1200 gpm, the final drawdown was 23 ft from a nonpumping water level of 15 ft.

The pumping equipment presently installed is a Red Jacket submersible pump set at 80 ft, rated at 1040 gpm, and powered by a 15-hp Red Jacket electric motor.

The following mineral analysis made by the Illinois Environmental Protection Agency (Lab. No. A17025) is for a water sample from the well collected March 30, 1976, after 30 min of pumping at 275 gpm.

WELL NO. 4, LABORATORY NO. A17025					
		mg/l	me/l		
Iron	Fe	1.1		Silica	SiO <sub>2</sub> 13
Manganese	Mn	0.02		Fluoride	F 0.3 0.02
Ammonium	NH <sub>4</sub>	0.10	0.01	Boron	B 0.3
Sodium	Na	11	0.48	Cyanide	CN 0.01
Potassium	K	4.5	0.12	Nitrate	NO <sub>3</sub> 0.0 0.00
Calcium	Ca	143	7.14	Chloride	Cl 10 0.28
Magnesium	Mg	75	6.17	Sulfate	SO <sub>4</sub> 300 6.24
				Alkalinity(asCaCO <sub>3</sub> )	368 7.36
Arsenic	As	0.000		Hardness(asCaCO <sub>3</sub> )	666 13.32
Barium	Ba	0.0			
Cadmium	Cd	0.00		Total dissolved	
Chromium	Cr	0.00		minerals	800
Copper	Cu	0.03			
Lead	Pb	0.00		pH (as rec'd)	7.3
Mercury	Hg	0.0001		Radioactivity	
Nickel	Ni	0.0		Alpha pc/l	4.5
Selenium	Se	0.00		± deviation	3.2
Silver	Ag	0.00		Beta pc/l	5.2
Zinc	Zn	0.0		± deviation	3.0

WELL NO. 5, open to the Silurian dolomite, was completed in 1935 to a depth of 265 ft (reported to be 263 ft deep in 1975) by the W. L. Thorne Co., Des Plaines. This well was acquired from the Pralle Dairy in 1979. The well is located near the corner of Burville Road and Wood St., approximately 2000 ft N and 850 ft E of the SW corner of Section 16, T34N, R14E. The land surface elevation at the well is approximately 730 ft.

The well is cased with 8-in. pipe from land surface to a depth of 87 ft.

Upon completion, the nonpumping water level was reported to be 16 ft.

A production test was conducted by the Wehling Well Works, Beecher, on July 11, 1966. After 2.1 hr of pumping at rates of 102 to 325 gpm, the drawdown was 62 ft from a nonpumping water level of 15 ft. After a 10-min idle period, pumping was continued for 1.8 hr at rates of 350 to 300 gpm with a final drawdown of 105 ft.

A production test was conducted by the Wehling Well Works on May 12, 1975. After 3.1 hr of pumping at rates ranging from 270 to 380 gpm, the drawdown was 114 ft from a nonpumping water level of 28 ft. Pumping was continued for 2 hr at rates of 300 to 350 gpm with a final drawdown of 90 ft. Fifteen min after pumping was stopped, the water level had recovered to 35 ft.

The pumping equipment presently installed is a Red Jacket submersible pump (No. 2506R5-6-290PE) set at 147 ft, rated at 225 gpm, and powered by a 25-hp electric motor.

A mineral analysis made by the Illinois Environmental Protection Agency (Lab. No. B29359) of a sample collected December 10, 1980, after pumping for 30 min, showed the water to have a hardness of 420 mg/l, total dissolved minerals of 462 mg/l, and an iron content of 0.75 mg/l.

WELL NO. 6, open to the Silurian dolomite, was completed in November 1979 to a depth of 520 ft by the Wehling Well Works, Beecher. As of October 1980, this well was not in use. The well is located on the north side of Richton Road about 0.5 mile west of Illinois Route 394, approximately 200 ft N and 2600 ft W of the SE corner of Section 2, T34N, R14E. The land surface elevation at the well is approximately 722 ft.

A drillers log of Well No. 6 follows:

Strata	Thickness (ft)	Depth (ft)
Drift	122	122
Limestone	398	520

A 17-in. diameter hole was drilled to a depth of 122 ft and finished 12 in. in diameter from 122 to 520 ft. The well is cased with 18-in. black steel pipe from about 1 ft above land surface to a depth of 10 ft and 12-in. black steel pipe from about 1 ft above land surface to a depth of 122 ft (cemented in).

A production test was conducted by the driller on December 3, 1979. After 8 hr of pumping at rates ranging from 176 to 390 gpm, the final drawdown was 105 ft from a nonpumping water level of 59 ft below land surface. Six min after pumping was stopped, the water level had recovered to 64 ft.

On December 4, 1979, this well was treated with 1000 gal of acid.

After acidizing, a production test was conducted by the driller on December 5, 1979. After 8 hr of pumping at rates ranging from 538 to 246 gpm, the final drawdown was 54

ft from a nonpumping water level of 55 ft below land surface. Five min after pumping was stopped, the water level had recovered to 64 ft.

The permanent pumping equipment is not yet installed.

A partial analysis of a sample (Lab. No. 213905) collected December 5, 1979, showed the water to have a hardness of 332 mg/l, total dissolved minerals of 465 mg/l, and an iron content of 0.9 mg/l.

## CRYSTAL LAWNS SUBDIVISION

Crystal Lawns Subdivision (est. 1488), located about 3 miles southeast of Plainfield, installed a public water supply in 1959. The water system is owned and operated by the Crystal Lawns Addition Improvement Association. Five wells are in use. In 1978 there were 425 services, all metered; the estimated average and maximum pumpages in 1973 were 50,000 and 75,000 gpd, respectively. The water is chlorinated and fluoridated.

WELL NO. 1, open to the Silurian dolomite, was completed in December 1959 to a depth of 250 ft by Dreher & Schorie, Joliet. The well is located at 2403 Satellite Drive, approximately 200 ft N and 1150 ft W of the SE corner of Section 26, T36N, R9E. The land surface elevation at the well is approximately 602 ft.

An 8-in. diameter hole was drilled to a depth of 120 ft and finished 6 in. in diameter from 120 to 250 ft. The well is cased with 8-in. pipe from about 1.5 ft above the pump-house floor to a depth of 47 ft.

In September 1970, the nonpumping water level was reported to be 15 ft.

The pumping equipment presently installed is a Jacuzzi submersible pump set at 130 ft, rated at 120 gpm, and powered by a 15-hp Jacuzzi electric motor.

A mineral analysis made by the Illinois Environmental Protection Agency (Lab. No. B41467) of a sample collected April 11, 1977, after pumping for 5 min at 120 gpm, showed the water to have a hardness of 432 mg/l, total dissolved minerals of 508 mg/l, and an iron content of 1.9 mg/l.

WELL NO. 2, open to the Silurian dolomite, was completed in March 1963 to a depth of 250 ft by Dreher & Schorie, Joliet. The well is located at Willshire Road and Satellite Drive, approximately 1200 ft N and 1050 ft W of the SE corner of Section 26, T36N, R9E. The land surface elevation at the well is approximately 595 ft.

An 8-in. diameter hole was drilled to a depth of 120 ft and finished 6 in. in diameter from 120 to 250 ft. The well is cased with 8-in. pipe from about 0.1 ft above the pump-house floor to a depth of 32 ft.

The pumping equipment presently installed is a Goulds submersible pump set at 120 ft, rated at 70 gpm, and powered by a 7 1/4-hp Franklin electric motor.

A mineral analysis made by the Illinois Environmental Protection Agency (Lab. No. C006545) of a sample collected March 20, 1974, after pumping for 1 hr at 75 gpm, showed

the water to have a hardness of 388 mg/l, total dissolved minerals of 476 mg/l, and an iron content of 0.2 mg/l.

WELL NO. 3, open to the Silurian dolomite, was completed in August 1966 to a depth of 250 ft by Dreher & Schorie, Joliet. The well is located at Westline Drive and Willshire Road, approximately 1200 ft N and 2500 ft W of the SE corner of Section 26, T36N, R9E. The land surface elevation at the well is approximately 595 ft.

An 8-in. diameter hole was drilled to a depth of 250 ft. The well is equipped with a Merrill Manufacturing Co. pit-less adapter from about 0.3 ft above the wellhouse roof to a depth of 4 ft and cased with 8-in. pipe from 4 ft to a depth of 42 ft.

The pumping equipment presently installed is a Red Jacket submersible pump set at 130 ft, rated at 100 gpm, and powered by a 7 1/2-hp Red Jacket electric motor.

A mineral analysis made by the Illinois Environmental Protection Agency (Lab. No. B41471) of a sample collected April 11, 1977, after pumping for 5 min at 120 gpm, showed the water to have a hardness of 369 mg/l, total dissolved minerals of 463 mg/l, and an iron content of 0.7 mg/l.

WELL NO. 4, open to the Silurian dolomite, was completed in January 1967 to a depth of 250 ft by Dreher & Schorie, Joliet. The well is located at Hollylynn Lane and Von Esch St., approximately 1350 ft N and 750 ft E of the SW corner of Section 26, T36N, R9E. The land surface elevation at the well is approximately 615 ft.

An 8-in. diameter hole was drilled to a depth of 250 ft. The well is cased with 8-in. steel pipe from about 1.5 ft above the pump-house floor to a depth of 76 ft.

The pumping equipment presently installed is a Red Jacket submersible pump set at 150 ft, rated at 75 gpm, and powered by a 7 1/4-hp Red Jacket electric motor.

A mineral analysis made by the Illinois Environmental Protection Agency (Lab. No. B47790) of a sample collected April 29, 1980, showed the water to have a hardness of 364 mg/l, total dissolved minerals of 467 mg/l, and an iron content of 0.26 mg/l.

WELL NO. 5, open to the Silurian dolomite, was completed in April 1972 to a depth of 250 ft by Dreher & Schorie, Joliet. The well is located on the west side of Byrum Road between Prieboy Ave. and Lockner Blvd., approximately 2450 ft N and 2300 ft E of the SW corner of Section